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ABSTRACT

A study examined the factors associated with operational limitations of the Training and Visit System, an information diffusion method, at the local levels. A personal interview survey was conducted to gather data required for this study from agricultural extension personnel from three predominantly agricultural areas in Sri Lanka. Stepwise regression analyses were used at 0.01 significance level to determine the degree of influence of independent variables related to both characteristics of extension personnel and the Training and Visit System on the dependent variable, the number of operational problems identified by extension personnel. The study revealed that the number of operational problems was influenced by both independent variable sets. Approximately 16 percent of the variance in the dependent variable was attributable to the individual characteristics of Extension agents, specifically age and satisfaction with being an Extension agent. On the other hand, activities specific to the Training and Visit System influenced nearly 52 percent of variation in the number of operational problems. Study findings were seen as having several useful implications for how administrators and consultants of the Training and Visit System may improve its operational effectiveness at the local level. (YLB)

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FACTORS ASSOCIATED WITH OPERATIONAL LIMITATIONS OF TRAINING AND VISIT SYSTEM AT THE LOCAL LEVEL

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FACTORS ASSOCIATED WITH OPERATIONAL LIMITATIONS OF TRAINING AND VISIT SYSTEM AT THE LOCAL LEVEL

Summary

This research examined the factors associated with operational limitations of the Training and Visit System, an information diffusion method, at local levels. A personal interview survey was conducted to gather data required for this study from agricultural extension personnel from three predominantly agricultural areas. Stepwise regression analyses were used at 0.01 significance level to determine the degree of influence of independent variables related to both characteristics of extension personnel and the Training and Visit System on the dependent variable, the number of operational problems identified by extension personnel. The study revealed that the number of operational problems was influenced by both independent variable sets. Approximately 16% of the variance in the dependent variable was attributable to the individual characteristics of Extension agents. On the other hand, activities specific to the Training and Visit System influenced nearly 52% of variation in the number of operational problems. The findings of this study have several useful implications for how administrators and consultants of the Training and Visit System may improve its operational effectiveness at the local level.

During the past few decades efforts have been taken by many International Development Agencies such as the Food and Agricultural Organization (FAO), United States Agency for International Development (USAID), Winrock International, Board on International Food and Agriculture Development (BIFAD), and World Bank to reorganize and develop extension education system in many developing countries. Evidently, the international development agencies have used different approaches at different times. The Land-grant model in the 1950's, Integrated Rural Development Model in the 1960's, Training and Visit System (T & V System) in the 1970's, and Farming system in the 1980's have been most widely used as a basis for the reorganization and development. The T & V System has been introduced into several countries such as India, Nepal, Sri Lanka, Burma, Thailand, and Turkey by the World Bank with its technical and financial assistance (World Bank, 1977).

The T & V System is based on the two levels of communication strategy (Benor & Harrison, 1977). During the first level, Village Level Extension personnel work directly with selected farmers called "Contact Farmers" and in turn the contact farmers act as "multiplicator" of information to other farmers called "Follower Farmers" at the second level. The T & V System has shown both successes and failures not only among various countries but also among regions under different social, cultural, political, situational, and organizational structures of the extension education system of the particular country (Adam, 1982).

The T & V System was introduced first on a trial basis in a district in 1970 and eventually into all the districts of Sri Lanka by the Department of Agriculture with the financial and technical assistance of the World Bank. This new initiative not only has replaced the century old inherited colonial extension education system (Lynn, 1949), but also brought new changes in the organization and operation of the extension education system in Sri Lanka. The T & V System experienced operational limitations at various stages of its implementation (Blankenburg, Sivayoganathan, Jayatileka, & Navaratnam. 1980). Accordingly, characteristics of both extension personnel and the Training and Visit System have been identified as crucial operational problems. Most of the operational problems have been encountered at local levels and are considered as critical limiting factors in the effective operation of the new extension education system (Jayatileka, 1982). At the local level, Extension Agents (Agricultural Instructors) are in charge of the implementation of the Training and Visit System. They are familiar with the major operational problems encountered during the implementation process (Navaratnam, 1986). However, there could be no study identified which focuses on the factors associated with the operational problems of the Training and Visit System at the local level.

Purpose of the Study

The purpose of the study was to focus on the factors associated with the operational problems of the Training and Visit System at local levels. The specific objectives of the present study were as follows:

1. To assess the variation in the number of problems identified by extension personnel as influenced by variables associated with their personal characteristics.

2. To assess the variation in the number of problems as influenced by variables specific to the Training and Visit System.

3. To make suggestions to improve the operational effectiveness of Training and Visit system at the local level.

Methodology

The participants of this study were Extension Agents from three predominantly agricultural areas in Sri Lanka. The three areas were purposively selected because they had more experience with the T & V system than other districts in Sri Lanka. Fifty, 28, and 14 Extension Agents were selected from the Anuradhapura district, Kurunegala district, and the "H" area of the Mahaweli irrigation scheme respectively. Because all the Extension Agents from the three areas were included in this study, sampling was not applied. A questionnaire was constructed to collect data relevant to both personal characteristics of extension personnel and the T & V System. Total years of education, age, residential status, sex, number of years of working experience as Extension Agents, and satisfaction with being an Extension Agent were considered as personal characteristics in this study. Additionally, the number of extension personnel supervised, number of months working in the same area, opinion on the concept of the T & V System, number of farmers visited per week, percentage of reliable contact farmers, number of contact farmers per extension personnel, number of follow farmers per contact farmer, and number of methods used to update current information were considered as the specific variables associated with the operation of the T & V System.

Following the review, revision, and pretesting of the questionnaire, data were collected by personal interview. Trained field workers were used for the interviewing. The purpose of the survey and its significance with regard to the improvement of the Training and Visit System was explained to the interviewees during the interviewing process. Multiple visits

were made to the offices of the respondents to obtain data for this study. A 100 percent participation of respondents was obtained in this study for the following reasons:

1. This research was conducted as a part of the study done by Blankenburg et al., with funding from the West German Research Foundation. Thus, resources were not a limiting factor in this study.

2. The Department of Agriculture, the sole agency for the operation of agricultural extension in Sri Lanka, has requested all extension personnel to provide necessary support to this study.

3. Interviewers and researcher lived in the study areas so that maximum contacts with respondents were made possible.

Collected data were analyzed using stepwise regression. The analysis was based on the assumption that the number of operational problems were associated with both characteristics of extension personnel and the Training and Visit System. Thus, the number of problems experienced by the Extension Agents was the dependent variable in the regression model. Characteristics of extension personnel and the Training and Visit System were the independent variables. The stepwise method adds variables one by one to the regression model, and the F statistics for a variable to be added must be significant at the chosen significance level. The stepwise process ends when none of the independent variable considered in the model has significant F statistics (Cody & Smith, 1985). In this study, 0.01 was chosen as the level of significance.

Findings

Extension Agents varied regarding individual background characteristics. All have completed a two year diploma in agriculture and some (30.4%) indicated that they obtained a one year practical farm school training certificate in addition to their diploma. Thus, the total education ranged from 14 to 15 years. The average age of the respondents was 35.5 years

with a minimum of 26 and maximum of 53. Many of the Extension Agents (80.4%) were males. Experiences of Extension Agents ranged from one to twenty two years. Approximately 43% of the extension workers were living in the area where they work.

Many respondents (86.9%) expressed a positive opinion about the implementation of the Training and Visit System in extension activities. They reported a considerable amount of change in their visits to farmers, on-the-job training, recordkeeping, attention on crop husbandry, and the type of farmers contacted. The number of visits to farmers by Extension Agents varied with two (10.8%), three (76.1%), and four (13.1%) per week. Number of contact farmers per Extension Agent varied from 12 to 48 and follower farmers per contact farmers ranged from five to 40. Field visits (100%), leaflets (73.9%), personal contact with colleagues (30.4%), contact with district staff (13%), and reading books, journals, magazines, and news papers (30.4%) were reported as major means of updating the current information on extension education activities relevant to their work. The number of problems encountered by Extension Agents ranged from five to eighteen. Almost 70% were not satisfied with being an Extension Agent in the Department of Agriculture.

The problems reported by Extension Agents included conflicts among contact farmers (89.1%), too many visits to farmers (86.9%), a rigid schedule of work (82.6%), increased paper work (82.6%), political affiliations (78.2%), lack of demonstration facilities (76.1%), lack of living facilities (73.9%), lack of transportation facilities (73.9%), unrealistic plans of work (71.7), redundant on-the-job training (71.7%), controversies regarding selection of contact farmers (69.5%), lack of participation of contact farmers (67.3%), lack of incentives and benefits (67.3%), insufficient support systems (67.3%), neglect of small farmers (67.3%), social conflicts (63%), and concentration on crop husbandry (60.8%).

The regression analysis revealed that the number of operational problems is associated with certain personal characteristics of Extension Agents and activities specific to T & V System. Table 1 shows the relationship between the variable in the set of personal characteristics and the dependent variable because F statistics was significant at $p=0.01$.

Table 1. Variance Explained by Personal Factors Predicting Operational Problems of Training and Visit System (N=92).

Source	DF	SS	MS	F	Prob>F
Regression	2	240.3	144.5	9.7	0.0024
Error	89	1237.3	14.8		
Total	91	1477.6			
	BV	**SE**	**TYPE II SS**	**F**	**Prob>F**
Age	0.17	0.0603	122.9	8.84	0.0038
Satisfaction	2.23	0.8483	95.80	6.69	0.0102

R-SQUARE=0.1626

As can be noted in in Table 1, the R-Square (variance explained) was 0.1626. Accordingly, nearly 16 percent of the variation in the reported number of problems was explained by the personal characteristics of the Extension Agents. The regression co-efficient show that only two variables, age and satisfaction of being an Extension Agent, significantly correlated ($p=0.01$) with the dependent variable. That is, the above two variables contributed to the observed variance. Other personal characteristics did not reveal any significant relationship with the operational problems of the Training and Visit System at the local level.

Table 2 shows that there is a significant relationship between some variables specific to the Training and Visit System and its operational problems at local levels.
The R-Square of this regression was 0.5224. Accordingly, nearly 52 percent of the variation in the dependent variable was attributable to this independent variables set. The regression co-efficients show that four variables in the model, opinion on the concept of the Training and Visit system, number of farmers visited per week, number of follower farmers per contact farmers, and number of updating methods, were significantly correlated ($p=0.01$) with the dependent variable of this study. Evidently, all other variables related to the Training and Visit System are unrelated to its operational problems.

Table 2. Variance Explained by Variable Related to the Training and Visit System on its Operational Problems (N = 92).

Source	DF	SS	MS	F	Prob > F
Regression	4	771.9	192.9	23.7	0.0001
Error	87	705.6	8.1		
Total	91	1477.6			

	BV	SE	TYPE II SS	F	Prob > F
Opinion on Concept	7.17	0.9811	433.58	53.46	0.0001
Farmers' Visits	-4.26	0.6315	370.06	45.63	0.0001
No. of Follower Farmers	-0.16	0.0483	96.18	11.86	0.0009
No. of Updating methods	1.53	0.2463	320.98	39.57	0.0001

R-SQUARE = 0.5224

Conclusion and its Practical Implications

This study found that the number of operational problems was associated with both characteristics of Extension Agents and the Training and Visit System. Accordingly, the findings may have practical implications for how administrators and consultants might overcome the operational problems encountered at local levels during the implementation of the Training and Visit System.

The Training and Visit System has been carried out in Sri Lanka and several other countries to improve the flow of extension education information to clientele. The present study revealed that this effort may have generated many operational problems from two major sources. The significant relationship found between the number of problems and age and satisfaction with being an Extension Agent shows that consideration of certain individual characteristics is of vital importance in the effective operation of Training and Visit System at local levels. Many Extension Agents in this study reported that they were dissatisfied because of a lack of transportation and housing, lower salary scale, political influences, insufficient extension support systems, and a lack of incentives and recognition for their work. Thus, effort

must be taken to bring about desirable improvements in the above areas. The relationship between the age of Extension Agents and the number of problems might not cause any problems in the long run because an examination of the simple correlation between the age and number of operational problems revealed a fairly good positive relationship. Thus, it would be possible to conclude that older Extension Agents could have experienced more problems than the younger ones during the implementation process of the new system.

Although many Extension Agents support the implementation of the Training and Visit System over the traditional extension system, factors such as opinion about the concept, number of farmers visited per week, number of follower farmers per contact farmer, and number of methods used for updating current information need to be considered by the administrators and consultants to bring about improvement in the effectiveness of the operation of the Training and Visit System at local levels. Further, the regression analysis revealed that the variance explained by the variables specific to the Training and Visit System is greater than the variance found with personal characteristics. That is, many operational problems are associated with the activities of the Training and Visit System. If this is the situation, major efforts must be first taken to bring needed changes in the implementation of the Training and Visit System.

Finally, efforts to improve the operational effectiveness of the Training and Visit System could be undertaken on step by step basis. Improvement in one factor may bring about improvement in another through a "chain effect." For example, provision of better transportation may help to resolve the problems associated with housing or visa versa. Considering these effects, the administrators and consultants of the Training and Visit Systems can develop a strategy and priority for both long term and short term plans to bring overall improvement in the operation of the Training and Visit System at the local levels with existing institutional and personnel resources. In effect, the findings of this study might serve as a basis for the better management and implementation of the Training and Visit System in those countries which already have operational problems at the local levels.

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